

Abstract

A pressure compensated variable displacement pump. The pump comprises a vane assembly positioned within a housing and a pressure ring positioned around the vane assembly to float within the housing. Additionally, the pump comprises a compensator having a guide, a first end, a second end and a plurality of individual adjusting elements. The second end is in contact with the pressure ring wherein the plurality of adjusting elements is positioned adjacent the second end in series to vary pressure created by the vane assembly against the pressure ring. A method of varying pressure comprises rotating a vane assembly within a pump housing and applying high pressure from the vane assembly against a pressure ring. Next, the method comprises varying the pressure by biasing a plurality of adjusting elements to reciprocate a guide against the pressure ring.